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The K8MFO Martin Flash Key Project – A Report

By Dan Karvonen (K8MFO)

Bill Holly's (K1BH) excellent book, *The Vibroplex Co., Inc. 1890 to 1990* (available from Vibroplex) provides definitive information on the formation of Martin Research & Manufacturing Corporation (MR&M) in the 1938/1939-time period. Principals in the company were J. W. Martin and R. W. Martin, sons of Horace Martin, inventor of the Vibroplex. It appears that the company was in existence from about October 1938 until December1939, at which time they announced the sale of their patents and all interests in their keys to the J.H. Bunnell Company.

Tom French, W1IMQ, likewise provides excellent information on the 4 MR&M keys in his *Vibroplex Collector's Guide*, available from Artifax Books. Three of the models were obvious copies of Vibroplex keys (Original, Blue Racer, and Lightning Bug). The fourth model is somewhat similar to the Vibroplex Midget. All MR&M Flash Keys have a serial number on their nameplate. Some nameplates face to the left, others to the right. Because of the short time frame in which these keys were manufactured, they are somewhat uncommon.

Tom French also provides the official model names for the MR&M Flash Keys. They are:

Professional No. 1	- clone of Original
Professional No. 6	- clone of Lightning Bug
Junior Flash Key	- clone of Blue Racer
Amateur Flash Key	- "Midget type" key

For the past year I have attempted to secure information on as many MR&M Flash Keys as possible, in order to estimate total production figures, as well as production of each model. Even with a good deal of effort I have only been able to add 22 total keys into my database. While this is a very low number, it is all that I have to work with.

In estimating total production quantities, I used the same method employed by Randy Cole, KN6W, in his article in *The Vail Correspondent*, No. 11. The method consists of adding the serial numbers of all keys surveyed, and dividing the sum by the size of the group. If the starting point for the serial numbers appears to be at a point greater than one, you subtract that starting number to arrive at the mean. The estimated production number of keys is simply twice the mean.

In my survey the lowest serial number reported was 5152, and the highest was 6039. It would appear that the numbering started with number 5100. Following the formula through, I came up with a mean of 533.5, which would indicate an estimated production of 1067 MR&M Flash Keys. The obvious question is: where are the 1045 that are not listed in my survey?

Here are the results of my number of keys by model:

Professional No. 1	– 5 keys
Professional No. 6	– 7 keys
Junior Flash Key	– 6 keys
Amateur Flash Key	– 4 keys

Since my total number of keys in the survey is so small, it is difficult to draw any conclusion from the data. It is true that the keys are rather uncommon and that not many people have one in their collection.

As Bill Holly and Tom French point out in their books, these keys were later manufactured by Bunnell as Bunnell-Martin Flash keys with their own Bunnell model numbers. The later Flash Keys do not have serial numbers. They do not seem to be any more common than their MR&M counterparts.

MR&M also made a carrying case for their keys, similar to, but not exactly the same as, the Vibroplex case. Likewise, they made a "piggy back key", which is a straight key that could be attached to the terminals of the bug. I became aware of two of these while compiling the survey. Four of the 22 keys are nickel-plated, one has a gray base (likely repainted), and the remaining 17 have a wrinkled black base.

Did the Martin brothers actually make 1067 bugs in the short time that they were in business? John Elwood's comprehensive study of Vibroplex serial numbers shows a range of about 2300 for the same period. Since there are no definitive records available, we can only speculate.

Martin Flash Key Serial Numbers

Serial Number	**Model**	**Finish**
5152	Professional #6	Black Wrinkle
5205	Junior Flash Key	Black Wrinkle
5362	Junior Flash Key	Black Wrinkle
5369	Junior Flash Key	Black Wrinkle
5385	Amateur	Black Wrinkle
5430	Junior Flash Key	Black Wrinkle
5447	Professional #1	Black Base
5494	Professional #1	Nickel Plated
5520	Professional #6	Nickel Plated (with piggyback key)
5575	Professional #1	Black Wrinkle
5621	Professional #6	Nickel Plated
5698	Professional #6	Black Wrinkle (with piggyback key)
5724	Professional #6	Black Wrinkle
5727	Amateur	Black Wrinkle
5745	Professional #6	Black Base
5822	Junior Flash Key	Black Wrinkle

5851	Junior Flash Key	Painted Navy Grey
5852	Amateur	Black Wrinkle
5927	Professional #6	Nickel Plated
5977	Professional #1	Black Base
6015	Amateur	Black Wrinkle
6039	Professional #1	Black Wrinkle

Thanks to Bill Holly and Tom French for doing all of the difficult research on MR&M! ***Don Karvonen***

Identification of McElroy, TAC and copy Streamkeys

By Stan Riome (VE3STN)

Sitting in front of me are 8 look-alike Stream Keys which I presume to be:

1. McElroy Stream Key #200 Professional, black base
2. Transitional McElroy/Telegraph Apparatus Company (TAC) #200 Professional model with the narrow no-bulge main lever, long pivot lever cross arms, and machined anvil of a McElroy but on a black wrinkle base with the Three Finger Shield emblem and number of a TAC.
3. TAC #200, Professional, black base
4. TAC #200, Professional, cut off black base
5. TAC #300, Deluxe, chromed
6. Copy of TAC #200, Professional, black base
7. Copy of TAC #200, Professional, black base from which the paint has been removed from the top and most of the bottom
8. McElroy #100 Amateur model

The word "presume" has been used after reading in Tom French's book *McElroy*, page 122: "The bulge in the lever seems to identify the TAC straight keys". The logic follows that the keys without the bulge are McElroy keys. The photo on page 99 in the same book of a McElroy advertisement showing two Stream Keys with levers without bulges and the photo on page 119 of a Deluxe Model #300 without a bulge beside its original cardboard carton seemed to support that presumption - until I "found" the photo on Russ Kleinman's Sparks Review of a Stream Key with a bulge beside its original box. Russ was kind enough to inform me that there is no indication on the box of the model or maker of the key. Should Tom French's box with a no-bulge key also bear no indication it would indicate that the presence of an original Mac Key box is not a valid means of differentiating a McElroy from a TAC Stream Key.

OBSERVATIONS:

Levers

1. The 3 TACs and 2 Copies all have a bulge at the hammer-anvil contact. The cross arms are all short (15/16") with round extensions into which the male ends of the pivot screws fit. The longitudinal part of the levers are wide (7/32")
2. The McElroy Key has no main lever bulge, the cross arms are long (1 3/8") into which the male pivot screw ends fit directly. The longitudinal part of the lever is narrow (6/32"). The dimensions of the transitional key lever are the same as the McElroy.
3. The rivet to secure the hammer to the lever at the contact on the McElroy and transitional keys have a concavity in its raised top.
4. The rivet to secure the hammer to the lever at the contact of the 3 TACs and 2 Copies are all flush with the lever, with no cavity.
5. Upon removing the levers from the TAC #200 and the Copy of the TAC #200 it was found that they were basically the same and interchangeable.

Circuit Closers

1. Neither Copy key has a circuit closer arm, but both have a hole in the base behind the gap screw-base junction. One has a contact strip from the left binding post to the anvil.
2. Two of the 3 TACs have holes in the base behind the lever gap screw. The one without a hole is the cut off model, which has no contact strip or circuit closer. The two others have a contact strip and one has a circuit closer arm attached to the right binding post.
3. The transitional key has no hole in the base, no contact strip and no closer arm.
4. The McElroy has both a contact strip and a closer arm attached by a screw and nut through the hole behind the lever gap screw.
5. The circuit closer arms of the TAC and McElroy are identical in size and shape

Anvils (see photo #1)

The 3 TACs and 2 Copies have cheap stamped metal anvils. The McElroy and the transitional model have machined anvils. The Mac Key shown on page 119 of Tom French's book "*McElroy*" has a machined anvil.

Screws and Lock Nuts

1. On all 3 of the TACs and 2 Copies, the head of the lever gap screw, the lever spring tension screw and the lever pivot screws are all round and straight knurled.

2. On the transitional key, the head of the lever gap screw and the lever pivot screws are hex with a straight slot. The head of the lever spring tension screw is round with a straight slot.

3. On the McElroy Key, the head of the lever gap screw and the lever spring tension screw is round with a straight slot. The heads of the lever pivot screws are the same diameter as the threads screwed through the standards, and are cross knurled to allow finger grip adjustments.

Ground Pigtails

1. The 2 Copies have holes at the lever-pivot junction but no rivets or pigtails.

2. Two of the 3 TACs have holes but no rivets or pigtails. The one without a hole is the cut off model.

3. The transitional key (with McElroy hardware) and the McElroy key both have pigtails riveted to the lever.

Pivot Standards

All standards appear similar except on the McElroy #200 professional where the original casting produced on the outside of the standards, a semi-round cavity, deep enough and large enough to allow a 5/8" washer to encircle the pivot screw. No washer is present.

Base sizes (Photo #1)

The base sizes of the McElroy, the Transitional key (with a TAC base) and the TAC keys are the same. A look at photo #1 will show the smaller size (4 ½") of the transitional key compared with the larger size (4 3/4") of the Copy. Note also the warping of the copy base.

Base wording and imprints

Sketch #1 shows the approximate shape, size and location of the "Three Finger Shield" emblem and the number "9" on the chrome Professional TAC #300 key. The emblem is visible on the black wrinkle based TAC and the number "2". The transitional key also bears the emblem and the number "8". Part of a number on the TAC cut off key is present.

What is the significance of these numbers?

- The emblem is not present on any of the McElroy Stream keys.
- The emblem is not present on the two Copies.

Photo #2 and sketch #2 shows the approximate location and size of the words "MADE IN USA" in relief on the top front of one of the copy keys. (For the photo, the lever was removed, the black paint stripped and the lettering was highlighted with a black felt marker.) Parts of the letters are visible projecting above the black wrinkled paint on the other Copy key. Note the crack in the pot metal base of the Copy key.

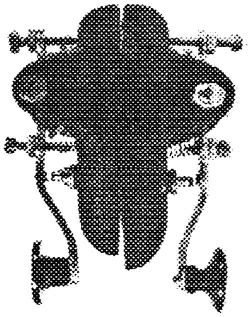


PHOTO #1

McElroy Model 3 Stream Key on left (4¼" long) Copy on right (4 3/4")

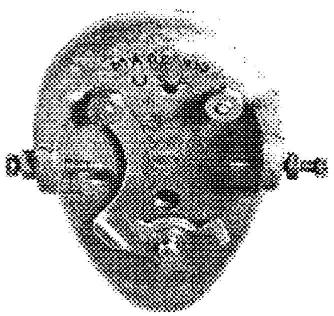


PHOTO #2

Copy of McElroy or TAC Stream Key with words "MADE IN USA" in relief on top front surface of base. (for the photo, lever removed, paint stripped and letters highlighted with black felt marker)

The wording was not found on any of the McElroy or TAC keys.

McElroy hardware (Photos #3 and #4)

The most convincing evidence of the features of the McElroy Stream Keys listed in the following section, is by viewing photos #3 and #4, of a McElroy model #200 on a plastic base.

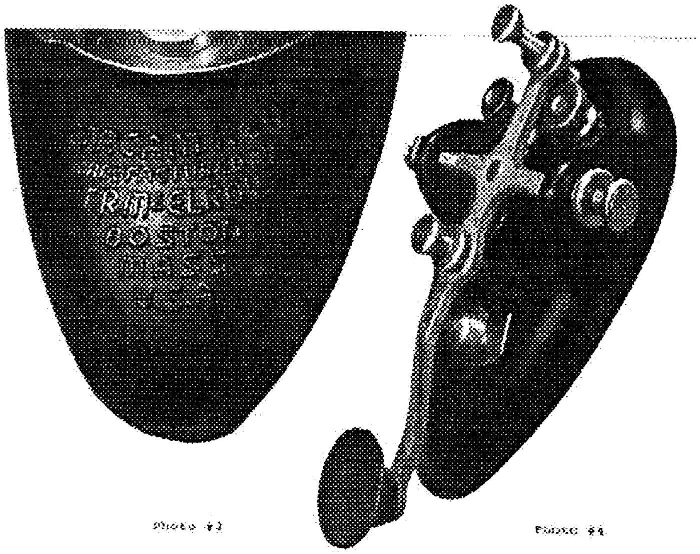


Photo #3

Photo #4

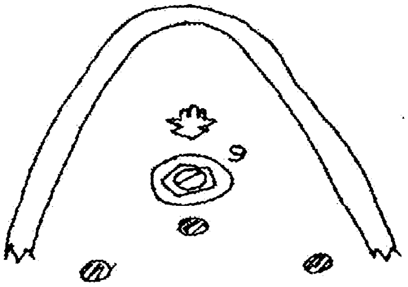
DISTINGUISHING FEATURES OF MCELROY, TAC AND COPY STREAM KEYS:

The McElroy Stream Key #100 Amateur is a straight key on a 4 ¼" pear shaped base of cast iron or plastic gently sloping backward; pivot screw standards acutely rounded at the top and laterally tapered at the rear; no head, slotted pivot screws; pivot screw lock nuts on the inside of the standards.

The McElroy Stream Key #200 Professional or #300 Deluxe is a straight key on a 4 ½" pear shaped base of cast iron or plastic (not the #300) base with a narrow no-bulge main lever; long pivot cross arm; machined anvil; concave hammer-lever rivet head; and a rivet which either holds or originally held a ground pigtail.

The TAC Stream Key #200 Professional or #300 Deluxe is a straight key on a 4 ½ " pear shaped base of cast iron with a wide main lever with a bulge at the lever-anvil junction; flush hammer-lever rivet head; short lever pivot cross arm; stamped anvil and a Three Finger Shield emblem and number impressed into the rear of the bottom of the base.

The Copy Stream Key is a straight key on a 4 3/4" pear shaped base of pot metal; with hardware basically the same as the TAC Stream Key and the words MADE IN USA in relief on the top of its base in front of the lever stop screw.



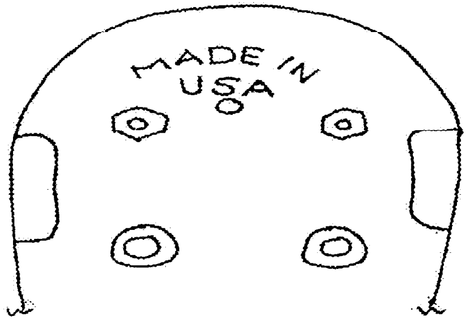
SKETCH #1

Approximate location, shape and size of the Three Finger Shield emblem and number impressed in the bottom back surface of the TAC Stream key base.

WHO MADE THE COPY STREAM KEYS ?

Tom French said it prophetically when he wrote "The pot metal jobs may be crude TACS or later rip-offs" (*N7CFO Keyletter*, page 118).

Since McElroy Stream key hardware is distinguishable from TAC and Copy hardware, and since McElroy made the McElroy keys before his involvement with TAC, it is not reasonable to associate him at that time with the Stream copy.



SKETCH #2

Approximate location of "MADE IN USA" in relief on front top of Copy of McElroy #200 Stream Key base.

Since the hardware (all parts other than the base) of the TACs and copies is basically the same and interchangeable on my 2 TACs and 2 copies, it seems more than a coincidence that the makers of the TACs and the copies should have purchased those parts from the same manufacturer - or - was the hardware made by the company that assembled the complete key - on the iron base of the TAC and the pot metal base of the copy? Should it ever be shown that TAC was the maker of the copies, it would not necessarily implicate McElroy as being in agreement with, or having any input into their production. If, as Tom French said "or later rip-offs". The conundrum deepens.

I recognize that with such a small sample that these thoughts will act solely as a base for further comments, criticisms and corrections.

REFERENCES:

My thanks to five gentlemen who have made significant contributions to the study and enjoyment of things telegraphic. To Tom French for his many generous letters and emails of encouragement and the information found in his book "McElroy" pages 118-120; to Dave Pennes for his revelations in the N7CFO Keyletter page 107; and the reply it received from Tom French in the *N7CFO Keyletter* page 118 ; to Lynn Burlingame for his dedication and endurance in producing the *N7CFO Keyletter* and his observations on page 107; to Russ Kleinman for his photo in the *Sparks Review* and a personal email and to Murray Willer for his constant graciousness during telephone and eyeball contacts.

Variations Among J-38 Keys -or- Rivet Counting On A Budget

by Scott Hill (K6IX)

The following information is adapted from my web site at: http://www.qsl.net/k6ix where you will find more pictures of J-38's than you ever wanted to see, including examples of all the keys listed below.

I. Introduction to J-38 Keys. The J-38 was designed to be used with a Signal Corps radio/telegraph operator training set. The strange looking binding posts and shorting strap at the back of the key were used to connect a set of headphones to one side of the key ("tel") and the other side of the key ("line") to the training set. The effect was to put the key and headphones in series. The circuit closing switch on the right side of the key was used to set the key for listening (switch closed) or sending (switch open). The other odd piece of hardware, a little eye screw on the left side of the key, was used to tie a stay cord or lanyard from the headset leads to the key. For more detail on the training set, and to get a lot more basic information on J-38 keys, see *Keyletter* #29, page 336, and get a copy of *The Vail Correspondent*, Issue # 10, from Tom French at Artifax Books.

J-38 keys are sturdy, handsome, and have a good "feel" when used for sending code. With a little patience an excellent key can be purchased for a reasonable price at flea markets, hamfests, and on-line auctions if you don't mind disassembling and cleaning the key yourself.

II. Disclaimer. To the best of my knowledge it would be impossible to identify the manufacturer of the great majority of J-38 keys. There are four reasons: 1) Most of the keys are not marked, 2) Multiple manufacturers made identical keys, 3) Single manufacturers made different keys at different times, and 4) Many parts are interchangeable, and for over 60 years these keys have been in the hands of people who loved to experiment with equipment, which means there are many "mix and match" keys to be found.

If most keys cannot be identified by manufacturer, and "as found" keys may not be "as manufactured", then it seems that the best approach to categorizing J-38's would be to try to find identifiable types of keys based on physical characteristics. If enough identical keys of a given type exist, then it becomes an identifiable type.

I have tried to organize the information I've collected about J-38's by dividing the keys that I own, have seen, or have read about into several types based on "clusters" or "groupings" of characteristics. These characteristics are based on the types of metal used and the shapes and sizes of the various components. Since these characteristics are based purely on appearance I use either the term "white metal", or the term "brass", to describe the metal parts.

I have made subjective evaluations of the availability of each type as I have seen them being traded or sold in the marketplace. I have no way of knowing whether this also reflects the number of keys held by collectors. Perhaps, if we can agree on some of the basic types of J-38's, we can discover which types collectors are holding the most, and least, of.

III. "Types" of J-38 Keys. The following are what I propose to be some of the distinct, identifiable, types of J-38 keys, along with a description of the identifying characteristics. I have invented names for the types purely for convenience. I feel sure that some of these types are incompletely identified, and that there are many other identifiable types. This is just a start.

1. ARH type: The ARH type might be called the stereotype J-38 Key. A 3" x 4 ¾" Bakelite base with beveled edges, "J-38", "<--LINE-->", and "<--TEL-->" stamped (engraved?) in white on the base, rear binding posts strapped together and held into position with a pin in the base of each rear binding post, oval frame with a well cast into a bulge in the front to hold the spring, adjustable spring tension and contact spacing with lock nuts, adjustable trunnion screws with lock nuts, anvil strapped to left inner binding post, circuit closing switch which slides under the anvil strap at the front to short circuit the key, and the eye screw on the left rear of the base for attaching the stay cord on the headphones. The four binding posts are identical with removable knurled thumb screws, and holes for standard headset pins.

American Radio Hardware is the most identifiable maker of this type because of the amazing number of keys that are still found with American Radio Hardware boxes. Radio Essentials Incorporated seems to have made a key that is exactly the same in appearance, but not nearly as common (or at least not as many boxes have survived).

The ARH type is identified by having all the metal parts made of brass except for the eye screw, the frame of the key, and the key lever, which are white metal.

ARH type J-38's are very common in the marketplace, but I believe they are not quite as plentiful as the Lionel.

2. Lionel type: The Lionel type is easily identified by the base, which has radiused corners and top edges, a solid frame, which is painted black, and angled, rather than vertical knurling on the lock nuts. In addition, the "L" logo is cast into the bottom of the base, and the logo and company name are cast between the trunnion supports on the top of the frame.

The Lionel is also the only J-38 I know of which has positioning pins in the inner binding posts in addition to those in the rear binding posts (4 pins total). These pins hold the holes in the inner binding posts at a 45 degree angle to the centerline of the key (in contrast to the rear binding posts where the holes are positioned in parallel with the centerline of the key).

The metal parts on the Lionel keys I have seen are all brass except the rear shorting strap, the anvil strap, and the lever, which are white metal; and the frame, which is painted black.

Lionels seem to be the most common type of J-38 on the market (maybe because they sell at a premium), but there is a rare variation which has the words "THE LIONEL CORPORATION, N. Y." printed in white between the normal "J-38" lettering and the front edge of the frame. This Lionel variation was featured on the cover of "*The Vail Correspondent*" # 10.

3. Brass Frame type: This type is identified by a frame of cast brass, which is not painted or plated. In all the J-38's I have seen with brass frames the spring is held on the frame by a small lip which attaches under the anvil, bends down toward the base and then bends back to horizontal to provide a ledge for the base of the spring. This spring holding arrangement is in contrast to all the white metal bases I have seen which have a bulge cast into the front of the frame to hold the spring.

The other metal parts of these brass frame keys vary from key to key, particularly the back posts which I have seen in several unusual shapes. Some of them also have angled knurling on the lock nuts. I have a theory that perhaps these keys were early models, rushed into production by using stock "triumph" style frames, but substituting the spring holder described above for the older (and very breakable) spring which had the bottom end of the wire anchored directly in the brass frame. Stock binding posts from other sources could then have been used, accounting for the unusual shapes and sizes.

I also have two examples of a key that may either be a rare variation on the Brass Frame type, or may just be prototypes that some company made. They are like the Brass Frame type except that base has "Type J-38" on the front where there is normally only "J-38". In fact it was these keys that made me think that perhaps the Brass Frame type keys are all early, or pre-production, models. One of my “Type J-38” keys has “USSC” stamped into the frame under the gap adjusting screw.

4. TAC type: The TAC (Telegraph Apparatus Corporation) type was identified in the *N7CFO Keyletter*, issue # 23. Lynn found 5 of the keys in a Signal Corps code training set with a TAC "Oscillatone" and a cut off McElroy tear drop key. As Lynn says, "If everything else is TAC, the reasonable assumption is that the J-38's are TAC also."

Lynn lists several identifying characteristics, the most unusual being that: 1) the contacts are of very small diameter and not the same size. Those on the lever are 1/8", but on the anvil the diameter is 3/32"; and 2) all the metal parts except the frame, lever, and spring are brass. This is the only type I have seen with a brass eye screw except the Lionel.

There do not seem to be many TAC type J-38's on the market.

5. All White Metal type: On this type of J-38 all the metal components are of white metal. There are no un-plated brass parts on the key whatsoever. The other distinguishing characteristic of this type is that the eye screw is smaller than on the other J-38 types, with an outer diameter of 5/16” versus the standard 3/8”.

While there are only a few of these keys on the market, I believe that there are enough with these characteristics that they constitute an identifiable type.

IV. "Near" J-38 Keys. If you use the keys above to try to "reverse engineer" the Army Specifications for a J-38 key, two of the most likely specs would be that the key is mounted on a Bakelite base, 3" x 4 3/4", with the characters "J-38" stamped, in white, on the front of the key under the operating knob, and that the binding posts be configured as described for the ARC type above. If you accept these requirements, then there are several very important keys that are like J-38's in many ways, but do not meet this "spec". The following are the keys, that I know of, which I believe fall into this "not quite real J-38" group.

1. The JJ-38: A common Japanese made "ball bearing key" mounted on a Bakelite base with "JJ-38" in place of "J-38" on the front of the base.

I have read conflicting accounts of whether these keys may have had some relationship to the Japanese Defense Force after WWII, but I don't believe anyone claims they were made for the US Army Signal Corps.

JJ-38's are fairly common in the marketplace, but certainly less common than ARH and Lionel type J-38's.

2. The Artec J38: The Artec key has "J38" (note: no dash) stamped in white on the base under the operating knob. In addition it has the circuit closing switch pivot attached under the right inner binding post (a very poor arrangement), captive thumb screws (which cannot be removed) on the binding posts, and the name "Artec" cast into the top of the black painted frame on the left front of the key.

There seems to be a consensus that the Artec is not a "real" J-38. Randy Cole, however, posted a note on the MorseCode Internet reflector, 2/25/01, saying that he had found one in an unopened US Army package, so it appears that they were purchased and used by the Army at some time.

Artec J38's are fairly common in the marketplace, but again, less common than ARH and Lionel type J-38's.

3. The McElroy J38: (again, no dash) The easiest way to describe this key is that it is almost exactly like the Artec J38, except that it has McElroy cast into the base, and the circuit closing switch is attached by an independent screw on the rear of the frame.

The McElroy also has the black frame, captive thumb screws, and "J38" in white on the front of the base. Both the McElroy and the Artec also have a steel (rather than non-ferrous) shorting strap between the rear binding posts, a fact that I noticed because my Artec had rust on the bottom of the strap. I think that the Artec, McElroy, and maybe even the Winslow may have been either made for the same government contract, or at least used parts purchased from a common supplier.

The McElroy J-38 is a rare key. Tom Perera says on his web site that "The only known example was in the McElroy collection until a small number of them showed up at the 1999 Dayton hamfest." Tom French, in his McElroy Biography, indicates that there must be some McElroy J-38's that were identified by a stamping on the circuit closing lever.

4. The Winslow J-38: The Winslow is another Artec/McElroy look alike. It also has the black frame and captive thumb screws, but it DOES have a dash in the "J-38" on the front of the base.

In the *N7CFO Keyletter*, #28 there are copies of an advertisement from The Winslow Company for 15 different "J" keys, including the J-38. The advertisement is from the June 1943 Electronics Magazine, and states that all 15 types are "now in production".

I do not know how rare the Winslow is, but I currently know of only 2 keys, both in the collection of Dave Johnson, N0MNO. I do not have a Winslow in my collection, and Dave was kind enough to give me permission to use a picture from his web page. One of the pictures on Dave's web page at: http://www.qsl.net/n0mno/ shows the mil-spec packaging for a Winslow key, so it seems that it also was used by the US Army.

5. The J-38-FR: Known as the French J-38, this key is totally unlike any of the other J-38's or even near J-38's. The key looks like a typical unmounted, legless triumph key. There is no base. The binding posts have slotted, rather than knurled, screws, but the front of the frame does have the bulge inward to form a holder for the spring.

Cast into the bottom of the frame is "J-38-FR / Vuillemot / Creteil". John Elwood thinks that Vuillemot is probably a manufacturer's name, and Creteil is the city in France where the key was made.

I wrote Henri Heraud, F6AOU, a French key collector, about this key and he responded that: "...Vuillemot was a French Society manufacturing radio items for (the) army ... Your J-38-FR is a copy of US J-38 made by Vuillemot from ca. 1940 until (the) end of (the) CW Era, ca. 1980. ... You can see also ... the (crossed flags) of (the) French Army...".

I think that the French J-38 is a very rare key. I know of only five. Lou Moreau told John Elwood about the key after she had purchased one at an Army Surplus store in Pasadena. John went to the store and bought the last 4 that they had. He restored one, keeps one as his "before" key, traded one, and gave the fourth one to a new key collector to "help him get his collection started"! Obviously, I think that John Elwood is one of the grand characters in key collecting.

V. Conclusions. Let me repeat that I am sure that some of the types above can be better identified and that there are many types that can be added to these. My goal is to collect any information available about J-38 keys. I think the first step that needs to be taken is to catalog, or at least count, the numbers and types of J-38's that are owned by collectors. This should also help identify new types.

If you have J-38's in your collection, please email me directly (k6ix@arrl.net) or on the MorseCode reflector and let me know about them (how many, which types, etc.). I would particularly like to know if you have keys with manufacturer's identification (boxes, labels, etc.).

As I get new information I will compile it and get it to Lynn for inclusion in the Keyletter. I will also update my web site with any new types that are identified. (Maybe we could name new types after the person that identifies them first like they do with comets)

I am also anxious to trade or buy (we newbies don't have much to trade) J-38 type keys or literature of any kind about J-38's. I would particularly like to find a copy of TM 11-432 "Code Practice Equipment" (War Dept. 1942), and TM-2093 (Dept. of Army, 1950).

Prehistoric heliographs? The following is excerpted from an email that I received from Jim Riddle of Prescott, Arizona. Jim has a web page at: http://homestead.juno.com/kd7aoi/heliograph.html

First, Tom Windes wrote: "Jim and Tom (Baker), I have been interested in the army heliograph system for some time now, so your notes are of considerable interest. My interest stems from the similarity of the army system to a prehistoric Chacoan signaling system (AD 1000s) discovered by Al Hayes and myself in the early 1970s in the San Juan Basin of northwestern New Mexico while doing archaeology on the Chaco Project. We published a couple of articles about it but I have always wanted to do a comparative study of the spacing and location of the Chacoan signaling stations with those of the army's. I think the Chacoans were also using mirrors, although only one has ever been noted from collections there and it is long lost. I would greatly appreciate anything more you may have on the subject. Thanks - Tom Windes, archaeologist, National Park Service (UNM, Albuquerque)"

Tom Baker replied: "Hi there Tom. Nice to hear from you. Don't think I've seen much of you since we went out over Chaco Canyon a few years ago in a Piper Cub and made ourselves airsick looking at too many sites. Seems to me I also flew the daughter of Florence Ellis around once, and she mentioned that her mom thought the Anasazi had signaling stations on prominent landmarks, using fire at night and mirrors (micaceous slabs) by day. Don't know if she published on it or not. She said they had found fragments of the reflective stones on elevated Anasazi sites. That's if my memory serves; I'll bet it was ten years ago and I'm kind of fuzzy on it..."

Now, it's my turn: Hello, Tom W and Tom B, As a result of your comments respecting possible ancient heliograph sites I decided to test the effectiveness of certain minerals for use as heliographs. I contacted Beth Boyd, a geologist at Yavapai College here in Prescott and together we selected several mineral specimens for testing.

They are identified as follows: (measurements are of largest reflective face used and are in inches, average) Manhattan (Mica) Schist, New York, 2.5 x 4; Quartz Crystal, 1 x 2.25; Galena (lead sulfide) 1.25 x 1.25; Schist (metamorphous foliated), highly irregular face, 4 x 5; Muscovite (single flake) from Southern Rhodesia, 2 x 2.5 exposed in wood block; Microcline (White) (feldspar), Custer Co., S. Dakota, 1 x 3; Muscovite Mica (numerous flakes, varying from 1/16ö to 1/8ö thickness), 2.5 x 3.25; and (at center) Copper Pyrite Crystals, best surface excluding paint, 0.5 x .75.

Surprisingly good results were obtained when using the thick piece of clear Muscovite Mica. The longest range tested was 3.92 miles between the "scar" on the east side of Thumb Butte and the parking lot at the north end of the Prescott Resort, ironically owned by the Yavapai Indian Tribe, both sites in or adjacent to Prescott, Arizona. Ms Boyd also selected a smaller piece of similar mica for use at the resort. It being about 11:30am the sun was near its zenith allowing us to successfully signal one another. Interestingly, the mica outperformed a good quality 3" x 4" hand mirror I had, not quite so brilliant, but much easier to get "on target". This was due to the mica diffusing the reflected light providing a much wider field of reflection.

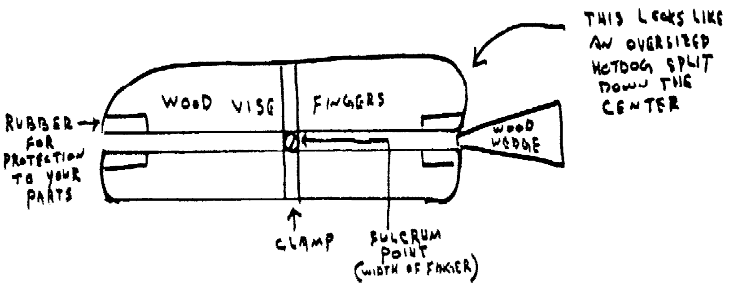
It would have been impossible to reflect intelligible signals with the modern mirror without mechanical aid (such as we find in "modern" heliographs. I soon discovered it was possible to send a series of flashes that could be counted. At first they were doubled since I raised the mirror to (and above) the target and dropped it back down on the same plane, causing two flashes. Soon I learned to raise the mirror and when I knew it had risen above the target would swing it around in a circle to the right bringing it back to the beginning point. Using the mica as a heliograph for intelligent signalling is easy. Holding its edges with both hands within a few inches of the ground, and reflecting its light onto the ground in front of you and in line with the target, slowly turn it upwards so that its flash will catch the target and pass on above it and then circle back to starting point as described above. Also, you can use a rock or a bush just in front of you with its top just below the target to aid in catching the initial reflection before raising the reflection just above to flash the target.

There is no reason while a series of prearranged signals could not be worked out using different numbers of flashes for different meanings. These could be repeated back by the receiving station for verification, if sun's angle is such as to permit, or on the following morning when conditions would permit. I have no idea whether the Chacoans used mica mirrors for signaling, but do understand that Muscovite mica mines do exist in New Mexico (see Austin, G. S., Barker, J. M., and Bauer, P. W., 1990, Precambrian muscovite from the M.I.C.A. mine, Picuris Mountains, New Mexico: New Mexico Geological Society, Guidebook 41, p. 369--374.)

The tests we performed prove that the thin mica slabs can be used, very possibly at distances of ten or miles depending on the size of the slab and even greater distances if the sun is low in the sky above and somewhat in line with the target. Mica is fragile and would require extreme care to prevent its breaking. Such mirrors would have been greatly treasured, I believe, but destroyed rather than to have them fall in enemy hands. Also, because of their fragile structure it is doubtful they would survive the elements or burial; so finding one in any condition would be unusual, possibly in a cave.

I want to thank Beth Boyd of Yavapai College for assisting me in this research and her son Mackenzie who assisted her. They both learned how to successfully use the mica mirrors in a matter of minutes. We also were equipped with two-way radios, and used a GPS receiver to record locations, distances and bearings. ***Jim Riddle***, 123 Briar St, Prescott AZ USA 86305-5036 e-mail: kd7aoi@arrl.net

Jewelers Hand Vise. My son Hank, gave me one of the handiest tools I've run across in a long time. It is called a Jeweler's Hand vise. He uses one for holding small parts for black powder guns that he is making. It works perfectly for holding small key parts that you are trying to clean and polish. I just finished restoring a Vibroplex Champion, and the only part it could not open wide enough to hold (other than the base) was the rectangular weight. They are not very expensive because they are constructed almost entirely of wood. One end has a rubber insert to protect parts, and a wedge is inserted in the other to clamp them. I bought one at a local jeweler's supply where they referred to it as a "Wood ring clamp". ***John Elwood.*** *(I searched the web and found them at Barnacle Wharf Trading Company, P.O. Box 0692, Newark, Ohio 43058. Telephone (740)344-2722. The part number is 2317 Their web page is at http://www.barnaclewharftradingco.com/contact.htm - **Lynn**)*


THIS LOOKS LIKE AN OVERSIZED HOTDOG SPLIT DOWN THE CENTER
WOOD VISE
FINGERS
RUBBER FOR PROTECTION TO YOUR PARTS
WOOD WEDGE
CLAMP
FULCRUM POINT (WIDTH OF FINGER)

Vibroplex Crimped Labels. I have a Vibroplex model X (serial number 69529) with a distinctive crimp in the label that runs parallel with the long side. I recently noticed a Model X (serial number 69041) on ebay with the same crimp. This would lead one to believe that possibly a few hundred were made this way. OR.... were these bugs sent in for repair or traded in to Vibroplex and then Vibroplex updated the bugs and put on new nameplates? But why the horizontal crimps? ***Steve Fried.***

J.H. Bunnell Addresses. Joe Jacobs provided the following listing of J.H. Bunnell company addresses:

Name	**Address**	**Date**
Bunnell, Jesse H.	70 Cortlandt St. New York	1878-1880
Bunnell, J.H. & Co.	106-108 then 112 Liberty St, New York	1880
J.H. Bunnell & Co.	112 Liberty St. N.Y.	1884
J.H. Bunnell & Co.	78 Cortlandt ST. New York (Headquarters) 136-138 W. 24th St. New York (Factory)	1890
J.H. Bunnell & Co., Inc.	20 Park Place New York	1900
J.H. Bunnell & Co.	20 Park Place, New York	1901
Bunnell Telegraphic Equipment and Supplies	110-116 Beekman St. New York	1901
J.H. Bunnell & Co., Inc.	32 Park Place, New York	c. 1915
J.H. Bunnell & Co. Inc.	Pearl and Prospect Streets	1926
J.H. Bunnell & Co.	Bunnell Building 215 Fulton St., New York	1941
J.H. Bunnell & Co.,	215 Fulton St. New York 7, N.Y. (Sales) 81 Prospect St., Brooklyn 1, N.Y. (Manufacturing)	1949
J.H. Bunnell & Co.	920 Essex St. Brooklyn 8, N.Y.	c. 1960
	920 Essex St., Brooklyn, N.Y. 11208	c. 1963
J.H. Bunnell & Co.	Valley Stream New York	c. 1968
INSO Electronic Products, Inc., J.H. Bunnell Div.	166 Babylon Turnpike, Roosevelt, New York 11575	Through 1988

Front and Back. I disagree though with the article in the last Keyletter that questions which end is the front end of a key. It has always been obvious to me that the knob/paddle end is the front end. You can't compare a key to a hand tool used for forming/shaping wood or metal. A key is primarily an electrical device. It is comparable to a radio, a microphone or a doorbell, all which have the front end facing the user during operation. We should set the record straight and formally declare the knob end as the front end. ***Gerry Maira.***

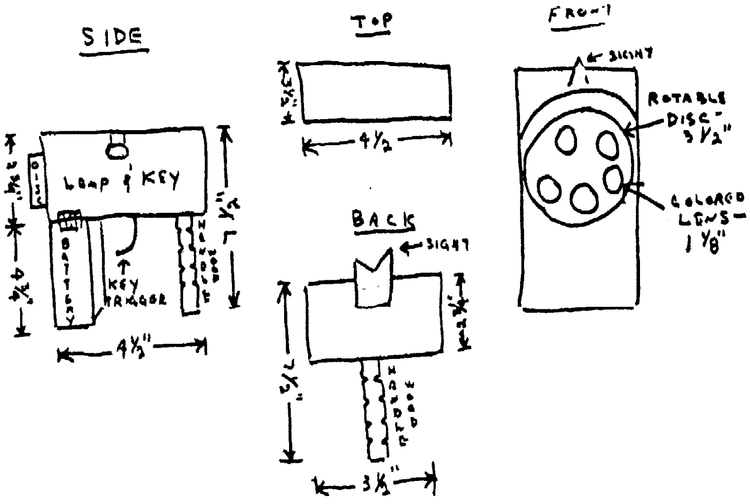
Costa Rican Bunnells. Correction to Russ Kleinman's Costa Rica paragraph page 387---re the Bunnell 3 item combo kob---- As far as I know MESCO was a retail outfit and most if not all their telegraph items came from Bunnell. These combo sets were made up to about 1987 at least for the Mexican Railroad - I remember the woodwork place in Long Island made the long bases for one of the last orders that Bunnell sold to Latin America. I remember a Spanish edition of their catalog that I stupidly sold a few years ago. ***Joe Jacobs.***

Admiralty Pattern Lantern. My son Karl gave me a light signalling device that I don't find listed in Murray Willer's reference. Inside the top cover the name plate reads:

ADMIRALTY PATTERN 1038
LANTERN, SIGNALLING, PORTABLE, FOR V/S

SERIAL NO 2393 **YEAR 1944**
THOS. POCKLINGTON LTD.
TORONTO

It is constructed in two compartments. The upper contains two lamp holders (one is a spare) and the key activating the light. The top of this compartment has a hinged corner to permit access to the lamps and adjustments to the key. (Lamp is a 1039). The bottom compartment is the battery compartment (Battery is a 1040). On the external front of the top compartment is a rotatable disc with a selection of five colored lenses - red, blue, green, white and clear.



I would guess that the V/S in the name plate might mean "Visual Sending" or Visual Signalling", but that is only a guess. I hope that Murray can add more info on it. With all of the colored lenses available it might be used for aircraft contact by a tower, but it is darn small for such use. ***John Elwood.***

Wallace/Clapp-Eastham/Bunnell Keys. Russ Kleinman wrote on page 356 of the Keyletter: " .... the Wallace key ad and the Clapp-Eastham key ad use the exact same picture. One of them, or possibly both of them, just marketed the key. My guess is that the key was made by Clapp-Eastham and Wallace only marketed, since we know that the C-E made a Boston key on a composition base".

To add to that observation, here is some further information. I assume that Russ was referring to the Clapp-Eastham "Blitzen" key ad on page 257 of the Keyletter, one of which I have had for several years and assume to be a C-E although there is no mark to indicate that it is a C-E . Recently, I was able to acquire another Blitzen key with hardware (everything other than the base) almost exactly the same as the C-E except that the pivot cross arm bears the name "Bunnell", and that the binding posts on the C -E have a round projection on their bases which fit into holes in the base to prevent the post from turning. While the Bunnell does not have that feature, it does have two round holes in the bottoms of the binding posts.

The composition bases of the two keys were cast in the same mould. That is assured as there are several fine indentations and projections in exactly the same locations along the sides of both bases. Both have 3 small holes along a line from the lever spring to the right binding post, the purpose of which is not known. Both bases are warped, the C-E slightly at the front right binding post but the Bunnell considerably, both along the longitudinal axis and the lateral axis, so much so that the pivot standards are bent out at their tops an eighth of an inch farther than their bottoms. On both bases, there is a crack on their top surfaces which runs from the lever springs to the right binding post. On the bottom of the C -E base the number #777151 has been scratched by hand. It is interesting to note that the words "pat app'd for" are impressed into the bottoms of both keys, but the word "patented" is printed beside the cut on the C-E key ad.

It looks like this complicates the question - “Who were the makers and or marketers of the Wallace/Clapp-Eastham/Bunnell keys”? ***Stan Riome.***

Morsecode Bits and Pieces.

Silverton Works. Hello Key People - This information came from Wyn Davies just before he left for the Balearic Islands on Tuesday: "Silvertown Works, London started off making submarine cables then started on making keys. They were in operation from about 1880 I think. They made the standard Single Current keys, Double Current keys and all kinds of sounders. Also made the Submarine Cable keys although I've never seen on of those. Their full title was 'The India Rubber and Gutta Percha Company Ltd' but this was shortened to Silvertown, where their works was situated on the banks of the Thames. I don't know when they closed down." ***Chuck Brydges***

Commonwealth nomenclature. I saw this over on the boat anchors list in a discussion on radios. It applies equally to British telegraph keys:

1. The suffix "ZA" applies to British and Commonwealth Army communications equipment.
2. RAF and Commonwealth Air Forces used "A/M"(Air Ministry)
3. Navies used " A.P." (Admiralty Pattern). ***Neal McEwen***

Harlösa Bug. Jan - SM5LNE provided me with additional information on the green based Swedish bug that I recently acquired:

> “Now I have find some more information about the Bug! The Harlösa was made in 1946 and the maker was the Ham Radio Op with name Sture Jönsson, SM7XY. I think Sture is silent key now I can’t find him in the Swedish Callbook. Well that was what I find about Harlösa and now I am 100 % sure your key is a Harlösa Bug. Take care with him.” ***Don K8MFO***

Bell telegraphy. At a flea market, I recently found a delightful little book, "Standard Electrical Dictionary," by Sloane, 1924. It has almost 800 pages of electrical terms very well defined. It encompasses all fields of electrical engineering including telegraphy and wireless telegraphy. It is hard to put down. One definition I found particularly interesting is:

> "Relay Bells. -- Bells connected by relay connection to a main line for acoustic telegraphy. A stroke on one bell indicates a dot and on the other [bell] a dash. The system is now nearly extinct."

It is hard to date some of the entries because the book was copyrighted in 1892, 1897, 1920 and 1924. I suspect some of the source material is even older as some of the illustrations of telegraph keys would be appropriate for the 1860s and 1870s. So it is hard to say when bell telegraphy became extinct.

The book, *A Dictionary of Electrical Words, Terms and Phrases,* by Edwin J. Houston, The Johnston Co., Ld., New York, 1889, pp.640+15 page appendix + ads has the following:

> "Bells, Relay -- Bells used in early forms of acoustic telegraphs as employed in England with relay sounders. The dot and dashes of the Morse alphabet were indicated by the sounds of a bell, a tap on one bell indicating a dot, and a tap on the other a dash. This system is now practically abandoned."

Does anyone have more info on the subject of bell telegraphy? ***Neal McEwen.***

Aussie Keys. I am just back from 10 days working the old Alice Springs Overland Telegraph Office where much of the old equipment is still in place. I though I'd provide an update on them.

1. Simplex Auto is the most common originally made in Melbourne By Leo G. Cohen. Several models, although only minor changes in each with the exception of the De Luxe which is automatic dots and dashes.
2. N.P. Thomas Automorse made in Adelaide by Hitchcox Bros with auto dots and dashes - often referred to as a Thomas key.
3. Shurdot made in Melbourne by J. Scash and is a semi auto key much in the style of the Vibroplex.
4. Buzza made by Buzza Products - semi auto much like the Vibroplex. They also made a straight key similar to a Bunnell.
5. BMR Codemaster after the style of the Simplex Auto and a semi auto.
6. Pendograph made in Adelaide by MacDonald - two models, ‘in line’ and ‘right angle’ - semi auto.
7. Robley and Tough. A double lever made in Perth.
8. H. C. Ingram an 'in line' semi auto made in Perth by Ingram.
9. Blue Point straight key and a similar practice set made as a set of key buzzer and light.
10. AWA (Amalgamated Wireless Australasia) WT 8 amp and other type keys for military radio sets.
11. Levensons Radio, Sydney - some keys are marked as Levenson but it is probable that it was just their name on another makers key.
12. Hookers Sydney - straight brass key much like a PMG key.
13. L. A. Peruscio, Melbourne - semi auto almost identical to a Vibroplex.
14. PMG Department - straight keys both two and three terminal and also WT8 amp.

15. Clipsal Adelaide - WT8 amp and two and three terminal straight keys. Clipsals are often referred to as PMG keys but very few were used by the PMG and probably only on a few radio circuits.

16. Doodlebug - boy scout type practice key and buzzer.

I have other Australian made keys which do not have a makers name, but certainly made in Australia. These are not listed in any particular order - just as they came into my head. ***Ron McMullen.***

U.S. Navy American Morse. For years I've been looking for hard evidence that Naval ships in port were connected to landlines to conduct their business. I have a WWI Navy application for Radioman 1st class. One of the requirements is proficiency in American Morse code. I have evidence that Naval shore stations used American Morse on trunk lines. Now I have evidence that the Navy did indeed use Morse instruments on board ship in dock. For several years I have been researching the Navy FOX circuit. I recently found and old timer who was intimately familiar with FOX and has provided me with info that I've never found before. As a side benefit, he gets side tracked into telling other stories while a radioman from 1939 to 1945.

"When in port at Pearl Harbor, all capital ships were connected by landline where we used regular telegraph sounders but used the regular radio type Morse code."

So now we know why we find KOBs with Navy markings. What we did not know was that International morse was used! I suspect that between he two wars, landline use migrated from Am. Morse to Int. Morse. Needless say, I have lots more questions for this oldtimer. ***Neal McEwen.***

A. H. Traeger. I recently bought a "bush radio", made by A. H. Traeger, on ebay. The seller was kind enough to send along a book about Traeger himself. Interesting fellow. He really opened up Australia to communications and "gave voice to the Flying Doctor". The most interesting part was that in 1931 he invented a Morse code telegraph typewriter. It looked like an ordinary typewriter of the time. Apparently only 50 of them were built. I wonder if any are still in existence. Maybe 1 or 2 in Australia, but I sure have never heard of it before. ***Mike B. Feher.***

FYO. I purchased the FYO paddle (non-iambic, the original offering) in 1962 at the Dayton Hamvention from Mr. Hills. I was around 18 years old and working for Hammarlund Mfg. Co., (I was doing booth duty). I still remember how nice Mr. Hills treated me. I was just a teenager, yet he took the time to chat with me. I bought the paddle on the spot. I was very impressed and happy with my purchase. I still have the paddle but no literature, so if any of you have any of the original literature, write ups, etc., I sure would like to beg a copy. ***Steve Fried.***

Phillips Code. Got an original Phillips Code book today dated 1902 - unfortunately it's in really fragile condition. Interestingly it was published by Telegraph Age, 253 Broadway, NY. Address sound familiar? ***Tony Rogozinski.***

Contact Bounce. Beginning in 1938, McElroy used a "dot stabilizer" on his bugs to cure this problem. It is essentially a finger attached to the pendulum that pulls on the dot contact, providing some pre-tensioning to the U shaped spring. It shouldn't be hard to make a device to do the same thing... maybe just a bit of wire would do it. I believe there was an article in a past issue of Morsum Magnificat on making your own pre-tensioner. ***Tom French.***

German Bug Terminology. While speaking of German bugs, here is what Greg Ulsamer told me about the proper terminology for German bugs. Greg is the author of *Feuerschiff Borkumriff,* a very nice book on Light ships and wireless. The "official" word for bug is "Halbautomatische Taste", or "semiautomatic key", but they are well known by the nickname "Schlackertaste". "Schlackern"is a sort of uncoordinated slow vibration. ***Neal McEwen.***

Western Union College. I just received the "Journal" for the 1904-5 school year of the Western Union College in LeMars, Iowa. This institution was founded in 1900 by the United Evangelical Church and had nothing at all to do with the Western Union Telegraph Co. This college offered degrees in Theology, German, BS in Science, Philosophy, Teaching, Music, Oratory as well as a commercial department with courses in stenography, typewriting and general commercial. This was an accredited institution and offered nothing in the way of training in telegraph or telephone. They had about 200 students in during the 1903-4 school year. ***Tony Rogozinski.***

Electro-Bug. My Electro-Bug does not have a Black Crackle finish - it is smooth black. The crackling, as it has been told to me by a paint Guru, is a result of poor paint processing. He said there were other factors, too, but basically the paint was not cured properly. Therefore, I think that your crackle started out like mine at one time. ***Tim Patton.***

Speed-X. I picked up a couple of Speed X's yesterday - both new variations. Between Dave Holley and myself we're close to pinning down some Speed-X history, I think. It seems that anything without a nameplate was NOT made when Logan owned the company (prior to '37 if Elwood is correct). So, the myth that all the ones without nameplates were sold by other suppliers is incorrect - I have two in their original boxes without plates myself. There were construction variations in the same model and I think that might be the clue to which ones were sold by Sears, et. al. but haven't quite figured that one out yet. It seems that the earliest Speed X's had grooves in the base for the connecting wires and non-reverse frames. They had a damper like the Electro Bug which I think ties those two companies in a bit more. ***Tony Rogozinski.***

+ +

Well, that is it for # 33. I have been asked by several subscribers about the "schedule" for printing the Keyletters. It is simple - I go to press when I have enough material to make up an issue. Two or three years ago I went from one ounce (roughly five sheets printed back to back) to two ounce issues. The two ounce issues provide eight or nine sheets back to back plus an envelope. I gained a page doing this because the back page of the ten page issues was used as a self mailer, though the envelope adds weight. The large issues also save on postage since the second ounce is cheaper. As a result, I am sending out fewer issues, but larger ones. Guys, don't forget - this is a shoestring operation, and I have to do everything possible to keep the costs down!

I have about three pages "in the can" for the next issue, and you can expect to see some interesting stuff on the L.S, Brach Company from Dan Howard.

Please don't be bashful about submitting information. The Web and e-mail are great, but face it - they don't provide a long term record of our hobby. The Keyletter has now provided you with over 400 pages of trivia, obscure information, and just plain good information. I am here to keep at it - as long as you support me with information, questions, and input.

73 L.

Lynn